

SPINNING, PROCESSING, AND APPLICATIONS OF CARBON NANOTUBE
FILAMENTS, RIBBONS, AND YARNS

ABSTRACT OF THE DISCLOSURE

Coagulation spinning produces structures such as fibers, ribbons,
5 and yarns of carbon nanotubes. Stabilization, orientation, and shaping of
spun materials are achieved by post-spinning processes. Advantages
include the elimination of core-sheath effects due to carbonaceous
contaminants, increasing mechanical properties, and eliminating
dimensional instabilities in liquid electrolytes that previously prohibited the
10 application of these spun materials in electrochemical devices. These
advances enable the application of coagulation-spun carbon nanotube
fibers, ribbons, and yarns in actuators, supercapacitors, and in devices for
electrical energy harvesting.